

CLAIMS

1. A device for providing multi-directional movement comprising a housing having at least one main roller located therein, at least one bearing means
5 comprising an annular member with a plurality of openings in which support rollers are located for contacting an upper surface of the or each main roller, a centring means for preventing contact between the main roller and the inner wall of the housing and comprising a plurality of
10 centring rollers for contacting a peripheral portion of the or each main roller, a retaining means for retaining the centring means in position in the housing around the or each main roller and a braking means for providing resistance to rotation of at least one main roller.
- 15 2. The device as claimed in claim 1 wherein the annular member is located above the or each main roller.
3. The device as claimed in claim 1 or 2 wherein a plurality of the support rollers are seated in
20 the openings so that part of their surfaces protrude below the annular member.
4. The device as claimed in claim 3 wherein all the support rollers are seated so that part of their surfaces protrude below the annular member.
- 25 5. The device as claimed in any one of claims 1 to 4 wherein part of a plurality of support rollers protrude through the holes above the annular member.
6. The device as claimed in claim 1 wherein the openings each comprise a hole through the annular
30 member which has a diameter which reduces in size to a minimum, which is less than the width of the roller bearing located therein.
7. The device as claimed in claim 1 wherein the retaining means is screwed into the bottom of the
35 housing.
8. The device as claimed in claim 7 wherein the centring means comprises a peripheral race with the

plurality of centre rollers located therein to contact the peripheral portion of the or each main roller.

9. The device as claimed in claim 8 wherein the retainer means comprises a skirting device which is
5 able to be screwed into the bottom of the housing.

10. The device as claimed in claim 8 wherein the retaining means comprises a circlip.

11. The device as claimed in claim 1 wherein the centering means is housed in a recessed circular
10 region of the housing located approximately at the equatorial region or the one main roller.

12. The device as claimed in claim 11, wherein the main roller is a spherical ball.

13 The device a claimed in claim 1 wherein the
15 braking means comprises a braking member which is configured to be urged into contact with at least one main roller.

14. The device as claimed in claim 5 wherein the braking member comprises a brake pad located above the
20 bearing means and configured to contact a top surface of at least one main roller.

15. The device as claimed in claim 14 wherein the braking means is able to be forced by an urging means through the annular member into contact with the main
25 roller.

16. The device as claimed in claim 15 wherein the urging means comprises a screwable member which is controlled by a horizontal screw through a side wall of the housing.

30 17. The device as claimed in claim 1 wherein the housing comprises a tubular portion with a plurality of stepped regions on its inner surface, including an upper stepped region for receipt of the annular member and a lower stepped region for receipt of the centering means.

35 18. The device as claimed in claim 1 comprising a plurality of main rollers each having one associated bearing means.

19. The device as claimed in claim 1 including a central power transfer means with roller equispaced therearound.

20. The device as claimed in claim 1 including
5 a peripheral race with bearings which are configured to contact outer surfaces of a plurality of main rollers.

21. The device as claimed in claim 20 wherein the central power transfer means comprises a drive shaft.

22. The device as claimed in claim 1 wherein
10 the main roller is able to move in any direction.

23. The device as claimed in claim 1 including a plurality of bearing means.

24. The device as claimed in claim 23 including left and right side bearing means.

25. The device as claimed in claim 24 including
15 left and right side centering means located on opposite sides of at least one roller.